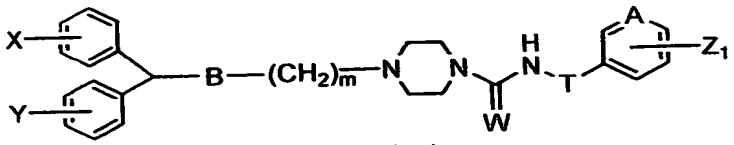
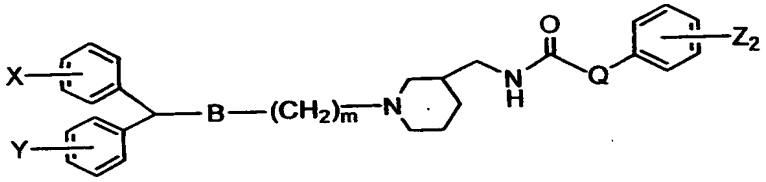
CLAIMS

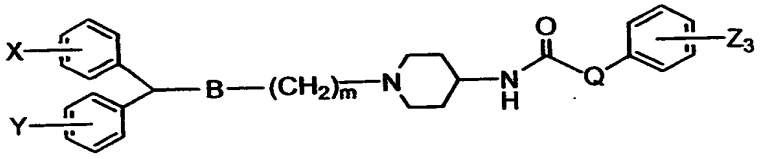
1. A compound having high affinity for a dopamine transporter having a formula selected from the group consisting of:



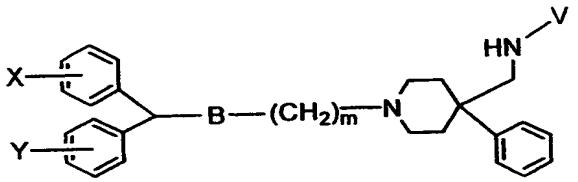
Formula I



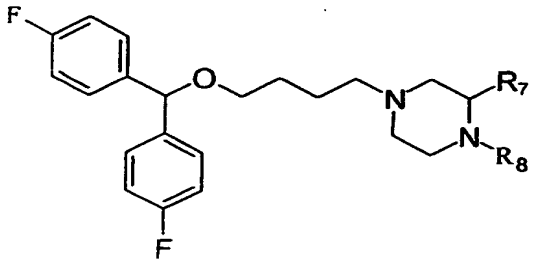
Formula II



Formula III



Formula IV



Formula V

wherein:

n is an integer of 1 to 6; X, Y, Z_1 and Z_2 can be the same or different and are hydrogen, halo, haloalkyl, alkyl, aryl, (C_1-C_6) alkoxy, N-alkyl,(C_2-C_6) acyloxy, N-alkylene, -SH, -SR, wherein R is from the same group as R_1 and R_2 and can be the same or different than R_1 and R_2, amino, nitro, cyano, hydroxy, C(=O) OR_6, -C(=O) NR_5R_4, NR_3R_2, or $S(=O)_k$ R_1 wherein $_k$ is 1 or 2, and R_1 to R_6 are independently hydrogen or (C_1-C_6) alkyl;

R_1, and R_2 can be the same or different and are hydrogen, (C_1-C_6) alkyl, hydroxyalkyl or mercaptoalkyl, -C(=O) OR_1, cyano, (C_1-C_6) alkenyl, (C_2-C_6) alkynyl, or 1, 2, 4-oxadiazol-5-yl optionally substituted at the 3-position by Z_4 wherein any (C_1-C_6) alky, (C_1-C_6) alkanoyl, (C_2-C_6) alkenyl or (C_2-C_6) alkynyl can optionally be substituted by 1, 2 or 3 Z;

Z_4 is (C_1-C_6) alkyl or phenyl, optionally substituted by 1, 2 or 3 Z_1

R_7 can be hydrogen, O or phenyl

R_8 can be hydrogen, phenyl, halophenyl, nitrophenyl, pyridyl, piperonyl or sulfoxonitrophenyl

W is O or S

T is amino or C_1-C_6 aminoalkyl

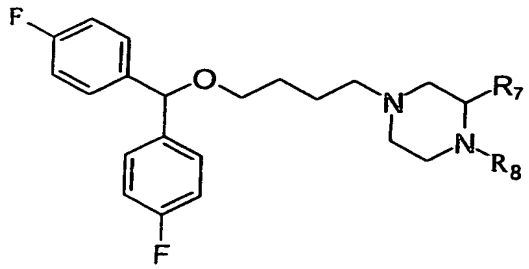
A is N or C

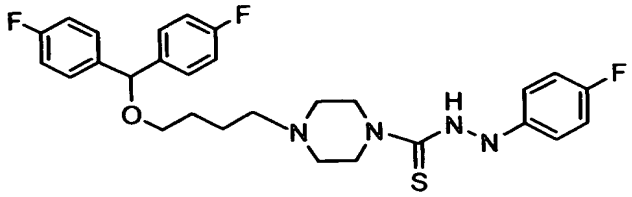
T is C_1-C_6 alklyl or sulfonyl and

V is alkyl (C_0-C_6), alkenyl, alkynyl, haloaryl, alkyl phenol, alkyl halophenyl, and R_1 or R_2 as indicated above and

ϕ is phenyl, naphthyl, thienyl or pyridinyl.

2. The compound of claim 1 selected from the group consisting of:





3. The compound of any one of claims 1, or 2 which is labeled with a radionuclide.

4. The compound of claim 3 wherein said radionuclide is ^{99m}Tc.

5. The compound of claim 3 wherein said radionuclide is an iodine isotope.

6. The method for imaging dopamine neurons in a mammal which comprises: administering to the mammal an imaging dose of the compound of claim 1 labeled with a radionuclide and detecting binding of the compound in the mammal.

7. The method for imaging dopamine neurons in a mammal which comprises: administering to the mammal an imaging dose of the compound of claim 2 labeled with a radionuclide and detecting binding of the compound in the mammal.

8. The method of treating an mammal afflicted with cocaine abuse which comprises: administering to the mammal an effective amount of a compound of claim 1.

9. The method of treating an animal afflicted with cocaine abuse which comprises: administering to the mammal an effective amount of a compound of claim 2.

10. The method of treating an mammal afflicted with a neurodegenerated disease characterized by a degeneration of dopamine neurons which comprises: administering to the mammal an effective amount of the compound of claim 1.

11. The method of treating an mammal afflicted with a neurodegenerated disease characterized by a degeneration of seratonin neurons which comprises:
administering to the mammal an effective amount of the compound of claim 1.

12. The method of treating a mammal afflicted with a neurodegenerated disease characterized by a degeneration of dopamine neurons which comprises:
administering to the mammal an effective amount of the compound of claim 2.

13. The method of treating a mammal afflicted with a neurodegenerated disease characterized by a degeneration of seratonin neurons which comprises:
administering to the mammal an effective amount of the compound of claim 2.